Scanning the Past

Dugald C. Jackson: A Pioneer Electrical Engineering Educator

Sixty years ago, the American Institute of Electrical Engineers (AIEE) awarded the Edison Medal to D. C. Jackson (Fig. 1) as recognition for his contributions to electrical engineering education and electrical power engineering. During a long career in engineering education and administration, Jackson became known for his curriculum innovations, which stressed both theory and practice and close ties between college and industry. He was a strong advocate of increased social involvement and responsibility by professional engineers, and he became a leader in a campaign to persuade the AIEE to adopt a code of ethics. He also maintained an active consulting practice with clients in both the electric power and communications industries.

Jackson was born in Kennett Square, PA, in 1865 and received a degree in civil engineering from Pennsylvania State College in 1885. While still an undergraduate, he worked during the summer of 1884 as an assistant to W. Stanley, a pioneer in alternating-current power engineering. After graduating from Penn State, Jackson studied electrical engineering for two years at Cornell University, where his mentor was W. A. Anthony. In 1887, Jackson and two young Cornell graduates were cofounders of the Western Engineering Company headquartered in Lincoln, NE, where they worked to install electric power plants and street railways. Jackson joined the Sprague Electric Railway and Motor Company in 1889 and then was a district engineer for the Edison General Electric Company after it acquired Sprague. These early years of industrial experience provided the background for his developing philosophy of what electrical engineering education should embody.

In 1891, Jackson accepted an invitation to become head of the newly organized Department of Electrical Engineering at the University of Wisconsin, which achieved national prominence under his leadership. He insisted that engineering students study economics and social sciences as well as engineering practice and theory. He was author of *A Textbook on Electromagnetism and the Construction of Dynamos,* published in 1893, and later was coauthor of two textbooks with his brother J. P. Jackson, who taught electrical engineering at Penn State (Fig. 2). In addition to his teaching and administrative duties, D. Jackson maintained a consulting engineering practice and encouraged other members of his departmental faculty to seek external consulting opportunities. He expected that those who completed the Wisconsin program would be "competent to conceive, organize, and direct extended industrial enterprises of broadly varied character." Jackson himself received about 30 patents, mostly in the field of electric power. He was elected president of the Society for the Promotion of Engineering Education in 1905.

Fig. 1. D. C. Jackson in a portrait from 1910, as president of the AIEE. (*Trans. AIEE,* vol. XXX, 1911.)

Early in 1907, Jackson moved to Boston, MA, where he became head of the Electrical Engineering Department at the Massachusetts Institute of Technology (MIT) (Fig. 3). He introduced changes in the undergraduate curriculum, following the pattern of the Wisconsin program, and also launched a graduate program, which awarded its first doctorate in 1910. Later, he initiated a cooperative option or

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